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A METAPODIAL OF *ACRATOCNUS* (EDENTATA:
MEGALONYCHIDAE) FROM A CAVE IN HISPANIOLA

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The present note deals with a metapodial of a very small ground sloth collected by Clayton E. Ray and Robert R. Allen in a cave 2 km southeast of Rancho La Guardia, Provincia de San Rafael, Dominican Republic, Hispaniola, between 31 March and 2 April 1963. The field work was supported by National Science Foundation grants GB 178 and G 16066, and was conducted with the cooperation of Ing. Emile de Boyrie Moya and Professor Eugenio de Jesús Marcano F., both of the Universidad Autonoma de Santo Domingo. The specimen (University of Florida Collections, Vertebrate Paleontology, UF 7798: Fig. 1A-D) is a left third metatarsal, fully adult (no distal epiphysial suture shown), only 15.7 mm in total length, and perfectly preserved. The strong carina is very nearly centrally placed, but slightly nearer to the external than to the internal side of the distal trochlear surface. The proximal dorsal process on the internal side, with the facet for metatarsal II, is placed lower and is less prominent than that on the external side, which articulates with the cuboid and metatarsal IV. The extensive proximal surface for the ectocuneiform is concave dorsoventrally and is not depressed between the two metatarsal processes; it ends ventrally in a marked tongue-like process.

The Antillean ground sloths described thus far comprise the genera *Acratocnus* Anthony (two species on Puerto Rico, and one each on Hispaniola and Cuba), *Megalocnus* Leidy (one species on Cuba, and one on Hispaniola), *Mesocnus* Matthew (two species on Cuba exclusively), *Microcnus* Matthew (one species on Cuba), and *Paulocnus*

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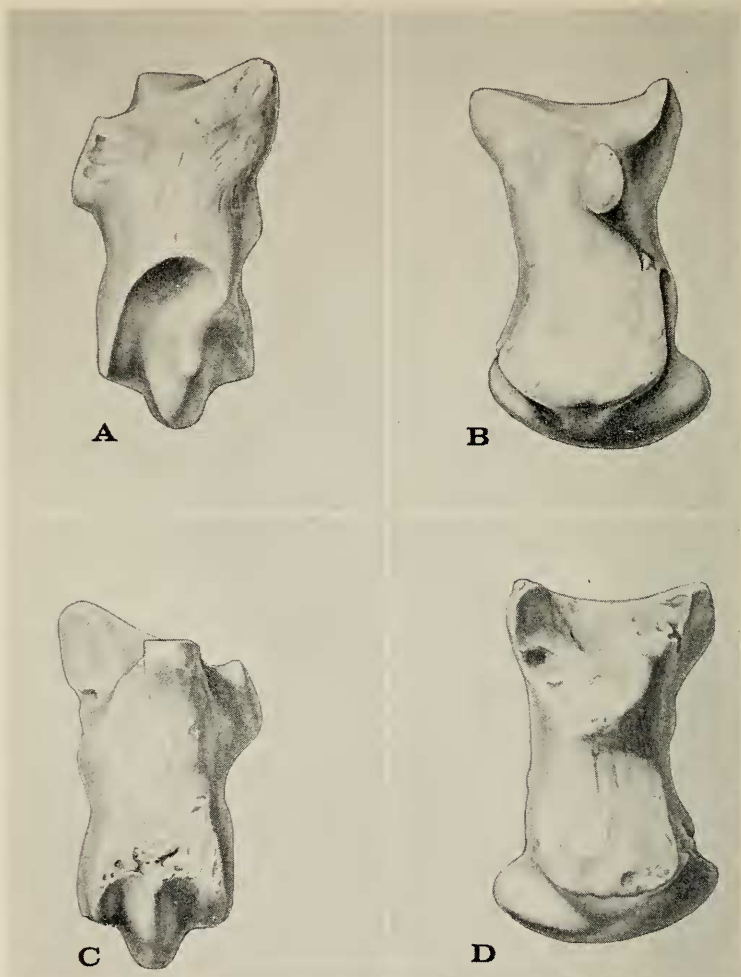


FIG. 1. Left metatarsal III, UF 7798, of *Acratocnus* in dorsal (A), medial (B), ventral (C), and lateral (D) aspects. Illustration prepared by Sue Hirschfeld under NSF GB 178.

Hooijer (one species on Curaçao). Of these, the third metatarsal of *Microcnus* only has been described; it is, therefore, difficult to assess the relationships of the newly found Hispaniolan metatarsal on the basis of the data in the literature.

While in the United States in the winter of 1962-63 the senior author

collected data on the foot bones of the Antillean ground sloths in the American Museum of Natural History, New York City, the Museum of Comparative Zoology at Harvard College, Cambridge, Mass., and the U. S. National Museum, Washington, D.C. He wishes to acknowledge his indebtedness to the curators in charge, Dr. Malcolm C. McKenna, Prof. Bryan Patterson, and Dr. David H. Johnson, for permission to study and borrow specimens. The present note concerns only the third metatarsal; a more comprehensive paper is in preparation.

In searching for comparative material to study in connection with the Curaçao ground sloth, *Paulocnus petrifactus* (Hooijer, 1962, 1964), a metatarsal III of which is now available, it was found that the "metatarsal III" of *Megalocnus rodens* Leidy from Cuba listed and figured by Matthew and Paula Couto (1959: 26 and pl. 23, figs. 3-6; AMNH 49899) is the metacarpal III instead, and hence of no use for comparison in the present case. No third metatarsal of *Megalocnus*, the largest of the Antillean ground sloths, appears to be available in the Cuban collections either at the AMNH or at the MCZ. Of the Cuban *Mesocnus* the third metatarsal is not available either. However, among unnumbered *Acratocnus* metapodials from Puerto Rico in the AMNH there is one (left) metatarsal III, measuring 23.7 mm in total length, and hence one-half longer than the Hispaniolan bone. The Puerto Rican bone appears to represent the smaller of the two species of *Acratocnus* on this island (Anthony, 1926), viz., *A. odontrigonus* Anthony. *Acratocnus antillensis* (Matthew), found on Cuba, apparently is somewhat more robust than *A. odontrigonus* (Matthew and Paula Couto, 1959: 42); its third metatarsal has not been found. The third metatarsal of the smallest known Antillean ground sloth, *Microcnus gliriformis* Matthew from Cuba, is in the AMNH collection (No. 49952) and has been described by Paula Couto (in Matthew and Paula Couto, 1959: 46) as very similar to its homologue in the Santacruzean (Miocene) genus *Pelecypodon* but only about three-fifths as large. Measurements have not been published, and are here supplied for the first time, in conjunction with those of the newly found Hispaniolan metatarsal III and that of *Acratocnus odontrigonus* from Puerto Rico.

It will be observed from Table I that the Hispaniolan bone, although shorter even than that of *Microcnus*, is very similar in proportions to its homologue in *Acratocnus*, and decidedly more slender than the metatarsal of *Microcnus*. The difference is most noticeable in width; in the Hispaniolan bone the ends and the shaft are only about three-fifths as wide as in the Cuban. The distal carina unfortunately is incomplete dorsally in the Cuban metapodial, but in the depths of shaft and proximal end the Hispaniolan bone is four-fifths as large as that from Cuba, the Hispaniolan bone being only one-tenth shorter than that from Cuba.

Extensive series of metapodials of various Miocene genera of ground sloths, including *Euchloeops*, *Pelecypodon*, *Hapalops*, and *Analcimorphus*, have been examined (details will be given later). While the *Microcnus*

TABLE 1.—Measurements (mm) of metatarsal III of *Microcnus* and of *Acratocnus*

	<i>Microcnus</i> <i>gliriformis</i> Cuba	UF 7798 Hispaniola	<i>Acratocnus</i> <i>odontrigonus</i> Puerto Rico
Total length	17.5	15.7	23.7
Least depth of shaft, externally	7.0	5.7	7.1
Greatest extent of carina	ca. 13.	9.4	ca. 13.5
Greatest proximal width	14.0	8.7	11.6
Least width of shaft, dorsally	10.7	6.7	9.1
Greatest distal width	11.0	6.7	10.5
Depth of proximal surface	11.8	9.3	14.0
Ratio distal width : length	0.63	0.43	0.44
Ratio proximal depth : length	0.67	0.59	0.59

metatarsal III indeed, as noted by Paula Couto, is an almost perfect scale reduction of, e.g., *Peleciodon* from Santa Cruz, the Hispaniolan bone is outside the range of variation of ratios in the Santacruzean sloths, being on the whole more slender in build, as is the *Acratocnus* metatarsal. The metatarsal III of *Paulocnus* can hardly be distinguished from that in the Santacruzean forms. It should be noted that none of the Miocene forms is nearly as small as *Microcnus* or the Hispaniolan form, which latter appears to be the smallest Antillean ground sloth thus far known. It is hoped that further material of this interesting pygmy sloth will be obtained from the Dominican Republic or Haiti to enable us to settle the affinities of this form more precisely than is at present possible. The specimen now available does not represent any of the known forms of ground sloth from the island of Hispaniola, which are definitely larger. The Haitian *Megalocnus serus* (Miller) is considerably larger than *Acratocnus odontrigonus* (Miller, 1929: 29), while the mandible of *Acratocnus comes* Miller from a cave at Bahia de Samaná, Dominican Republic, described by Hoffstetter (1955) is larger than that of *Acratocnus major* Anthony from Puerto Rico, and the remains of *Acratocnus* from Haiti described by Miller (1929: 26) agree with *A. odontrigonus* in general size.

In conclusion, it does seem that the Hispaniolan metatarsal represents a small species of *Acratocnus*, agreeing with this genus in the proportions of the metatarsal, and notwithstanding the resemblance in size should not be referred to *Microcnus*, in which the metatarsal is as heavily built as that in the Miocene forms and in the Curaçao sloth. Such proportional differences in the one element of the foot now available are indicative of similar differences in the other bones of the pes not yet found. Further search for sloth remains in Hispaniola, therefore, is much to be desired.

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